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A Case Report on Meningomyelocele with Hydrocephalus

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ABSTRACT
A midline cystic sac of meninges containing spinal tissue and CSF that herniates via a hole in the posterior vertebral arch is known as a Meningomyelocele. It is a birth defect that occurs when the spine and spinal cord do not develop completely. Hydrocephalus is the abnormal accumulation of Cerebrospinal fluid in the intracranial spaces.This happens when there is a problem with CSF production or absorption, or when the CSF channels become blocked. It causes the skull to expand and the cerebral ventricles to dilate.We are presenting a 7-month-old female childwho was brought by her parents with a complaint of increased head size and visible fluid-filled sac in the lumbosacral region. As narrated by the child's mother, the child had swelling in the Lumbosacral region noticed immediately after birth, initially of small size and gradually attained the present size, and also complained of leaking and bleeding from the site. The mother also noticed an increase in the size of the head in the past 4 months. Blood investigation and magnetic resonance imaging were performed. The patient underwent through ventriculoperitoneal shunt for the hydrocephalus. And then put on antibiotics for 5 days. Also, meningomyelocele closure is planned for the patient.

Keywords: Meningomyelocele, Hydrocephalus, Lumbosacral region, Chiari Malformation

INTRODUCTION:
A congenital condition known as meningomyelocele causes portions of the meninges and spinal cord (myelon) to protrude from incompletely closed vertebral arches, resulting in abnormalities of the central nervous system. (1) 60% to 90% of patients with concomitant meningomyelocele at birth develop hydrocephalus. It's possible that the necessity for ventricular shunting does not directly correlate with head size in the first few days of birth.(2) Meningomyelocele must be repaired as soon as possible to avoid complications like hypothermia and infection in the postpartum period. However, it isn't always possible to restore quickly for a variety of reasons.(3)

CASE PRESENTATION:
A 7-month-old female childwas admitted to Paediatric Ward. The patient has been admitted with thecomplaint of distension in the Lumbosacral area after birth along with leaking and bleeding from the site.The patient is a known case of Meningomyelocele and Hydrocephalus, the mother also noticed an increase in the size of the head for four months after birth. As narrated by the mother, the child had swelling in the lumbosacral region initially of small size and gradually attained the present size

The patient has been hospitalized right after birth for 7 days in case of Low Birthweight and bleeding from the lumbosacral swelling site. He also took all the immunization as scheduled.
The patient's parents perform a consanguineous marriage that can be associated with congenital abnormalities. Other than that, the patient does not have any direct blood relatives that suffer from congenital abnormalities which can relate to the patient's condition.

In a physical examination of the child, a visible fluid field pouch was seen in the lumbosacral region. Also,an increase in head circumference to 58cm, and irritability were found in the child.Laboratory examination was done in which the blood investigationshowedhemoglobin values aredecreased to 7.9gm %, white blood cell count is increased to 24,300cells/cumm.

On radiological examination, MRI shows large spina bifida in the lumbosacral region with meningomyelocele causing tethered cord. F/S/O Type II Arnold Chiari Malformation i.e., a structural defect in the cerebellum, characterized by a descending displacement of one or both cerebellar tonsils through the foramen weapon.

The patienthas undergone through ventriculoperitoneal shunt for the hydrocephalus. And then put on antibiotics for 5 days. Also,meningomyelocele closure is planned for the patient.

DISCUSSION:

One of the most significant congenital anomalies, meningomyelocele is frequently linked to hydrocephalus.(4-14) It has been noted that only 1 in 6 myelomeningocele patients exhibit indications of elevated intracranial pressure at birth, and only 1 in 8 have head circumferences that are larger than the 98th percentile.(15-23)Treatment options for meningomyelocele/encephalocele with accompanying ventriculomegaly include single-stage operations (where both lesions are treated simultaneously) and two-stage procedures (where each lesion is treated separately).(24)Although the third ventriculostomy seems alluring, mechanical shunting is more suitable for myelomeningocele patients. This is due to the pathophysiology of the disorders allowing for some degree of compensation, which makes it possible to miss modest CSF diversion malfunction signs and symptoms.(25) In patient with meningomyelocele and hydrocephalus, meningitis, increased intracranial pressure, and pneumonia is the three leading causes of death in children. (26-27)

CONCLUSION:

Meningomyelocele is a major congenital abnormality that is frequently accompanied by hydrocephalus. According to a recent assessment (Eckstein and Macnab, 1966), the mortality rate with contemporary therapy has dropped from almost 50% in 1958 to around 20% now.The patients were a diverse group, with the exception that they were all referred to a pediatric surgical facility for treatment. The Holter Valve has been utilized for Ventriculo-atrial shunt in instances of hydrocephalus since 1958, and the general treatment philosophy in the three centers was largely the same.

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